



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,338	12/12/2005	Masumi Kubo	4034-85	2559
23117 7590 04/01/2008 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203				
EXAMINER				
NGUYEN, THANH NHAN P				
ART UNIT		PAPER NUMBER		
2871				
MAIL DATE		DELIVERY MODE		
04/01/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

## Application No.

10/560,338

## Applicant(s)

KUBO ET AL.

## Examiner

THANH-NHAN P. NGUYEN

## Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SE/IB)
- Paper No(s)/Mail Date 6/18/06 4/25/06 12/12/05
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kubo et al (US 2002/0075436).**

Kubo et al disclose (figs. 9A, 9B, 25A and 25B) a liquid crystal display device, comprising:

Claim 28:

- a first substrate (100a)
- a second substrate (600b)
- a liquid crystal layer (30) provided between the first substrate and the second substrate
- wherein: a plurality of picture element regions are each defined by a first electrode (14) provided on one surface of the first substrate which is closer to the liquid crystal layer and a second electrode (22) provided on the second substrate and opposing the first electrode with the liquid crystal layer interposed therebetween; in each of the plurality of picture element regions, the liquid crystal layer is in a vertical orientation state when no voltage is applied between the first electrode and the second electrode; and in each of the plurality of picture

element regions, the first electrode (14) includes a plurality of openings (14a), a plurality of generally star-shaped conductive portions (14b) each having four acute corners, and a plurality of connecting portions (14b') each for connecting four conductive portions of the plurality of conductive portions to one another via the corners (at least in fig. 9B)

Kubo et al lack disclosure of (in fig. 9B – emphasis added) the second substrate includes a protrusion in an area corresponding to each of the plurality of connecting portions, the protrusion protruding toward the liquid crystal layer.

However, by comparing fig. 9B and fig. 25A, positions of all pixels are the same, except the shapes of the openings are different. When taking a look at 4 pixels together that formed as a square, a protrusion '28' (fig. 25A) that formed at the intersection of the diagonal lines of the square could have been obvious to form at the same position (the intersection of the diagonal lines of the square – emphasis added) as in fig. 9; where that position in fig. 9 is the connecting portion.

Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have the second substrate includes a protrusion in an area corresponding to each of the plurality of connecting portions, the protrusion protruding toward the liquid crystal layer at least for the benefit of improving the wide-view-angle in the LCD device.

Claim 29:

Similarly, limitation in claim 29 would have met in figs. 9B and 25A.

Claims 30 and 31:

Limitations in claims 30 and 31 are very similar to claims 28 and 29, respectively. The only limitation that is different is that instead of forming a protrusion on the second substrate, it is forming an opening.

This limitation does not patentably distinguish the invention since it is very well known in the art to form a protrusion or an opening or a combination thereof on the substrate(s) to improve the wide-view-angle in the LCD device.

Claims 1-27 are basically met the discussion regarding claims 28-31 rejection above.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

JP 2002-202511.

US 20050168674.

US 2005/0001964.

US 2005/0001947.

### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to (Nancy) Thanh-Nhan P. Nguyen whose telephone number is 571-272-1673. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on 571-272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2871

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

-- March 29, 2008  
(Nancy) Thanh-Nhan P. Nguyen  
Examiner  
Art Unit 2871

/David Nelms/

Supervisory Patent Examiner, Art Unit 2871